

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-19. (Canceled)

20. (Currently Amended) A method of generating a transport stream in an apparatus including a pickup, a controller and a transmitting part, the method comprising:

reading, via the pickup, an MPEG transport stream directly from an optical disc, the MPEG transport stream including a series of transport packets;

generating, via the controller, a program managing information packet for indicating a discontinuity of the MPEG transport stream in a form of a transport packet;

inserting, via the controller, the generated program managing information packet ~~at a connection point in the read MPEG transport stream~~ between two of the transport packets existing in the read MPEG transport stream when a discontinuity occurs in the MPEG transport stream; and

transferring, via the transmitting part, the MPEG transport stream including the inserted program managing information packet through a digital interface;

~~wherein the program managing information packet is inserted between two of the transport packets existing in the read MPEG transport stream.~~

21-25. (Canceled)

26. (Previously Presented) The method of claim 20, wherein the MPEG transport stream is an MPEG-2 transport stream.

27. (Previously Presented) The method of claim 20, wherein the apparatus comprises an optical disc player, and the inserting step is performed by the optical disc player.

28. (Previously Presented) The method of claim 27, wherein the reading step is performed by the optical disc player.

29. (Canceled).

30. (Currently Amended) A method of reproducing data from an optical disc in an apparatus including a pickup, a controller and a transmitting part, the method comprising:

reading, via the pickup, an MPEG transport stream including a series of transport packets carrying data directly from the optical disc, said MPEG transport stream to be transmitted through a digital interface;

generating, via the controller, a program managing information packet for indicating a discontinuity of the MPEG transport stream in a form of a transport packet;

inserting, via the controller, the generated program managing information packet ~~between two of the transport packets existing in the read MPEG transport stream at a connection point of the read MPEG transport stream~~ when a discontinuity occurs in the MPEG transport stream; and

transmitting, via the transmitting part, the MPEG transport stream having the program managing information packet inserted therein through the digital interface;

~~wherein the program managing information packet is inserted between two of the transport packets existing in the read MPEG transport stream.~~

31-34. (Canceled).

35. (Previously Presented) The method of claim 30, wherein the apparatus comprises an optical disc player, and the inserting step is performed by the optical disc player.

36. (Previously Presented) The method of claim 35, wherein the reading step is performed by the optical disc player.

37. (Canceled).

38. (Currently Amended) An apparatus for generating a transport stream, the apparatus comprising:

a pickup configured to read an MPEG transport stream directly from an optical disc, the MPEG transport stream including a series of transport packets carrying data and to be transferred through a digital interface;

a controller configured to generate a program managing information packet for indicating a discontinuity of the MPEG transport stream, and to insert a program~~the program~~ managing information packet ~~for indicating a discontinuity of the MPEG transport stream at a connection point of the read MPEG transport stream between two of the transport packets existing in the read MPEG transport stream~~ when a discontinuity occurs in the MPEG transport stream; and

a transmitting part configured to transmit the MPEG transport stream having the program managing information packet inserted therein through the digital interface;

~~wherein the controller is further configured to generate the program managing information packet in the form of a transport packet, and to insert the generated transport packet into the read MPEG transport stream; and~~

~~wherein the controller is further configured to insert the program managing information packet between two of the transport packets existing in the read MPEG transport stream.~~

39-43. (Canceled).

44. (Previously Presented) The apparatus of claim 38, wherein the MPEG transport stream is an MPEG-2 transport stream.

45. (Previously Presented) The apparatus of claim 38, wherein the apparatus is an optical disc player.

46. (Canceled)

47. (Currently Amended) An apparatus for reproducing data from an optical disc, the apparatus comprising:

a pickup configured to read an MPEG transport stream including a series of transport packets carrying data directly from the optical disc, said MPEG transport stream to be transmitted through a digital interface;;

a controller configured to generate the program managing information packet in the form of a transport packet, and to insert a program the program managing information packet indicating a discontinuity of the MPEG transport stream at a connection point of the MPEG transport stream between two of the transport packets existing in the read MPEG transport stream when a discontinuity occurs in the MPEG transport stream; and

a transmitting part configured to transmit the MPEG transport stream having the program managing information packet inserted therein through the digital interface;

~~wherein the controller is further configured to generate the program managing information packet in the form of a transport packet, and to insert the generated transport packet into the read MPEG transport stream; and~~

~~wherein the controller is further configured to insert the program managing information packet between two of the transport packets existing in the read MPEG transport stream.~~

48-52. (Canceled).

53. (Currently Amended) An apparatus for generating a transport stream, the apparatus comprising:

means for reading an MPEG transport stream directly from an optical disc, the MPEG transport stream including a series of transport packets carrying data, the MPEG transport stream to be transferred through a digital interface;

means for generating a program managing information packet indicating a discontinuity of the MPEG transport stream in a form of a transport packet;

means for inserting the generated program managing information between two of the transport packets existing in the read MPEG transport stream at a connection point of the read MPEG transport stream when a discontinuity occurs in the MPEG transport stream; and

means for transmitting the MPEG transport stream including the inserted program managing information through the digital interface;

~~wherein the means for inserting inserts the program managing information packet between two of the transport packets existing in the read MPEG transport stream.~~

54. (Currently Amended) An apparatus for generating a transport stream, the apparatus comprising:

means for recording an MPEG transport stream including a series of transport packets carrying data directly on an optical disc such that the MPEG transport stream can be read directly from the optical disc, said MPEG transport stream to be transmitted through a digital interface;

means for reading the recorded MPEG transport stream from the optical disc;

means for generating a program managing information packet indicating a discontinuity of the MPEG transport stream in a form of a transport packet;

means for inserting the program managing information packet between two of the transport packets existing in the read MPEG transport stream ~~at a connection point of the read MPEG transport stream~~ when a discontinuity occurs in the MPEG transport stream; and

means for transmitting the MPEG transport stream having the program managing information packet inserted therein through the digital interface;

~~wherein the means for inserting inserts the program managing information packet between two of the transport packets existing in the read MPEG transport stream.~~

55. (Previously Presented) The method of claim 20, further comprising:

detecting a null time interval in the MPEG transport stream, said null time interval corresponding to said discontinuity,

wherein the inserting step inserts the program managing information packet into the detected null time interval.

56. (Previously Presented) The method of claim 30, further comprising:

detecting a null time interval in the MPEG transport stream, said null time interval corresponding to said discontinuity,

wherein the inserting step inserts the program managing information packet into the detected null time interval.

57. (Previously Presented) The apparatus of claim 38, further comprising:

a detecting part configured to detect a null time interval in the MPEG transport stream, said null time interval corresponding to said discontinuity,

wherein the controller is further configured to insert the program managing information packet into the detected null time interval.

58. (Previously Presented) The apparatus of claim 47, further comprising:

a detecting part configured to detect a null time interval in the MPEG transport stream, said null time interval corresponding to said discontinuity,

wherein the controller is further configured to insert the program managing information packet into the detected null time interval.

59. (Previously Presented) The apparatus of claim 53, further comprising:

means for detecting a null time interval in the MPEG transport stream, said null time interval corresponding to said discontinuity,

wherein the means for inserting inserts the program managing information packet into the detected null time interval.

60. (Previously Presented) The apparatus of claim 54, further comprising:

means for detecting a null time interval in the MPEG transport stream, said null time interval corresponding to said discontinuity,

wherein the means for inserting inserts the program managing information packet into the detected null time interval.